TRA

DEPARTMENT OF TRADE AND INDUSTRY

Innovation in Manufacturing Industry

Government response to the First Report of the House of Lords Select Committee on Science and Technology, 1990–91 Session

Presented to Parliament by the Secretary of State for Trade and Industry
by Command of Her Majesty
June 1991

LONDON: HMSO
£3.65 net

Cm 1575

NR

WELLCOME
LIBRARY
P
9050

22501846820

XNR /

DEPARTMENT OF TRADE AND INDUSTRY

Innovation in Manufacturing Industry

Government response to the First Report of the House of Lords Select Committee on Science and Technology, 1990–91 Session

Presented to Parliament by the Secretary of State for Trade and Industry
by Command of Her Majesty
June 1991

INFORMATION CENTRE
13 OCT 1992
2042
Wellcome Centre for Medical Science

LONDON: HMSO
Cm 1575
£3.65 net

GOVERNMENT RESPONSE TO THE HOUSE OF LORDS SELECT COMMITTEE ON SCIENCE AND TECHNOLOGY REPORT[1] ON INNOVATION IN MANUFACTURING INDUSTRY

INTRODUCTION

1 Innovation has always been the prime source of economic growth. Sustained growth requires the continuous introduction of new products, made by new processes, often by new firms, using new designs, deploying new skills, and opening up new markets. Successful innovation helps put a firm ahead of its competitors and offers the prospect of a period of above normal profits. Less innovative firms are compelled to catch up or sink into decline. The success of British industry into the next century will depend crucially upon its ability to match and surpass the accelerating pace of innovation worldwide.

CULTURAL REVOLUTION

2 On 21 May 1991, the Secretary of State for Trade & Industry gave a major speech entitled "Innovation: competition and culture", at Warwick University, in which he identified the stimulation of innovation as a key priority of Government policy. He argued – as does the House of Lords Select Committee on Science and Technology – that a *revolution* in business, educational, and financial culture is required to accelerate the pace of innovation in the UK (10.8 & 10.9)[2]. However, culture and attitudes cannot be changed by law or decree. What Government can do directly is to restore incentives, to remove obstacles and to introduce a series of measures which, cumulatively, will act as a catalyst to change. The change itself must come in the attitudes and practices of management, in business, the education system and financial institutions.

3 The Government warmly welcomes the House of Lords Select Committee's report on "Innovation in Manufacturing Industry". The Committee's most valuable work is making an important contribution to changing attitudes and thus encouraging a "cultural revolution in industrial innovation". The Committee's conclusions (10.4-10.7) highlight the importance of innovation in manufacturing industry and the need to change national attitudes. The Government endorses these views and the recommendations that, among others, the media (10.15) and the financial community (10.16) have a significant role to play.

INDUSTRIAL SUCCESS

4 There has been a transformation in our manufacturing performance over the last decade (10.1–10.3). After a period of falling output and profitability during the mid-late 1970s, manufacturing output recovered during the 1980s to reach a record level in 1990. This was accompanied by faster productivity growth in manufacturing than was achieved by any other major industrialised country. Manufacturing investment reached a record level in 1989. Profitability has been restored to levels not seen since the early 1970s. An important overall measure of competitiveness is our share of world trade. Significantly, the UK share of world trade in manufacturing rose in 1990 for the second successive year. Our share has stabilised since the early 1980s following many years of decline.

5 This transformation in performance of UK manufacturing industry has been achieved by creating a framework in which enterprise and initiative have been able to flourish, not by intervention or subsidy (10.62 & 10.63). It has

---

[1] First Report, Session 1990–91, HL Paper 18

[2] References in brackets are to paragraphs in the Select Committee's Report

involved measures to reduce taxation, promote competition, return business to the private sector and reform the labour market. Indeed there has been a radical improvement in industrial relations since the 1970s with last year seeing fewer disputes than for any time for over half a century.

INDUSTRY'S ROLE

6 Due to the transformation of industrial performance over the last decade, industry is well placed to take advantage of a change in the nation's culture in respect of manufacturing and innovation. The Committee rightly directs a number of its recommendations (10.10-10.13 and 10.18-10.19) towards industry. It is primarily the task of companies to take the commercial decision as to which markets to address; what R&D to undertake; and how to manage their own businesses.

7 The profitability and long-term growth of firms in competitive international markets must depend, to a great extent, on retaining the expertise and experience of highly talented and motivated individuals. However, only firms themselves can determine levels of pay in the light of the economic and financial situation they are in. As the Committee rightly recognises (10.10), it is not for Government to decide what is, or is not, appropriate for key jobs.

8 The Government also endorses the Committee's implicitly stated view that the training of employees is primarily a matter for employers (10.11). However, the network of Training and Enterprise Councils (TECs), and in Scotland, Local Enterprise Companies (LECs), will be encouraging employers to train and develop people effectively, both on recruitment and throughout employment. The Department of Employment's "Investment in People" initiative, which promotes effective training linked to business objectives, will help them achieve this.

9 The Committee recommends that industry must establish closer links with schools, building on existing relationships (10.12). The Government fully supports this and its policy is designed to encourage just such links. A recent Department of Education and Science (DES) "Survey of School/Industry Links" indicated that over 90 per cent of secondary schools now have links with local firms. However, the Government does not support the Committee's recommendation (10.14) that it should fund those non-profit making organisations working effectively to promote school/industry links on a pound for pound basis. Since the publication of the Committee's Report, the "Education Business Partnership" initiative has been launched. This is designed to develop local, formal, joint initiatives between education and employers, drawing together all local players and co-ordinating all Government education/industry links. Funding of such activities will, on the whole, be channelled through TECs and LECs in Scotland.

10 While it is up to companies to adopt best practice in innovation (10.18 & 10.19) the Government is encouraging them to do so eg through a shortly to be published booklet on "Innovation Plans: Getting the Message Across". This is part of the work of the DTI's Innovation Advisory Board (IAB) Action Team on Communications, which emphasises that a strategy for innovation must be an integral part of company plans and of relations between companies and investors. The work of the IAB Action Team has also led to the recent publication of an R&D Scoreboard which emphasises the importance of R&D spend by companies at internationally competitive levels. The National Economic Development Office (NEDO) Innovation Tool-Kit, launched last year, is now being used by about 500 companies across the country.

INWARD INVESTMENT AND DESIGN

11 The Committee's comments on inward investment, which will enhance manufacturing capability in the short term (10.17), are welcomed by the Government which intends to promote such investment vigorously and also to encourage local R&D and design inputs. The Government welcomes strongly the growing Japanese investment in research in the UK, particularly where this is part of an integrated investment covering research, design and manufacture, so that the outcome of such investment is exploited in the UK.

12 The Government also agrees with the Committee that good design is integral to product development and to the commercial exploitation of the innovation process (10.17). The Design Council is the Government's main agent for the promotion of design and receives an annual grant-in-aid from DTI. The Council has a number of inter-related objectives which reflect DTI's objectives. They are: to help British industry and commerce understand the nature of good design and the positive effect it has on market performance; and to encourage design education and training to be effective and responsive to the present and future needs of industry.

INDUSTRY LINKS WITH HIGHER EDUCATION INSTITUTES AND RESEARCH COUNCILS

13 Closer relations between industry and higher education institutes (HEIs) are very important. The Government agrees with the Committee (10.20) that HEIs are one of the sources from which industry will derive the new knowledge which it applies in innovation. The White Paper "Higher Education: A New Framework", published on 20 May, makes clear that HEIs have responded to the need indentified in the 1987 White Paper "Higher Education: Meeting the Challenge" to take increasing account of the requirements of industry and commerce. The new framework in the White Paper will end the increasingly artificial division of the binary line and promote equal status between academic and vocational studies in higher education. The buoyant growth in student numbers projected in the White Paper will make a major contribution to the UK's scientific and technological base.

14 The Government welcomes the recognition given to the excellence of the science base and to the work done by Research Councils and HEIs to improve technology transfer to industry. It continues to be one of the Government's aims for the science base that it should provide a source of new scientific knowledge and technology that has the potential to be taken up and developed by industry for the wider good of the economy as a whole. One of the most effective methods of bridging the gap between the science base and industry is the free movement of people between them. Science parks attached to universities and polytechnics have been a particularly successful way of achieving this. In 1979 there were only two science parks. Now there are 39 with a further 22 planned, including the possibility of a first one based at a government research establishment—NEL, the National Engineering Laboratory.

15 Significant progress has been made in the development of HEI/industry links but the Government agrees that British companies can do more to exploit the science base (10.21). UK universities' earnings from research grants and contracts from UK industry and public corporations have risen nearly fourfold from £27 million in 1982–83 to £105 million in 1989–90. Further help for universities and polytechnics to exploit their technologies commercially was recently announced by the Secretary of State for Trade and Industry. Four million pounds will be available to HEIs to strengthen the marketing and commercial skills of their "Industrial Units" and a further £2 million to encourage them to carry out institution-wide technology audits to identify research results for exploitation.

16 The LINK scheme is an important and successful catalyst for getting industry to work in collaboration with the science base. In addition, the establishment of the Interdisciplinary Research Centres helps bring together HEIs, Research Councils and industry into a common research environment. The Teaching Company Scheme also encourages closer ties between industry and HEIs through the placement of young graduates for work experience in industry.

17 It is Government policy to involve the business and industrial community at all levels in education (10.22). Through the Education Reform Act, there is statutory provision to encourage this in the governing of polytechnics and colleges, and Government has encouraged training to make this effective. The Government is committed to maintaining a healthy science base and will continue to fund the Research Councils and HEIs accordingly. As indicated in the Department of Education and Science Departmental Report, the Government stands by its commitment not to reduce public support in response to institutions' continuing success in generating income from other sources (10.23).

COST OF CAPITAL

18 The Government does not accept that there is conclusive evidence that the real, post tax, cost of capital is consistently and significantly higher in the UK than in our competitors (10.24). The Committee's conclusion rests heavily on the results of an American study by the Federal Reserve Bank of New York. This study has, however, been criticised for the uncritical use of the ratio of company earnings to the share price (the inverse of the p/e ratio) as a measure of the cost of equity finance. The study makes other assumptions which are open to challenge. For example, the reason why the study claims to find the cost of capital high, for an R&D project in the UK, is simply that it makes an unrealistic assumption about the time profile of a typical innovation project. Although applied research may be undertaken 10 years in advance of any pay-off, the bulk of the expenditure on an innovation project tends to occur much closer to market launch.

19 UK interest rates are, at present, above those in a number of other countries. These levels reflect a number of factors, including the fact that UK inflation is still higher than in other G7 countries and that getting inflation down is the Government's top priority. Continued high inflation relative to the UK's competitors would be a serious threat to UK competitiveness in the long term, and it should be remembered that a 1 per cent increase in interest rates, even if sustained for a whole year, raises companies' costs by far less than a 1 per cent rise in pay settlements.

TAX AND ACCOUNTING

20 The Government believes that the current system of tax relief for R&D expenditure is already comprehensive. Additional relief of the kind the Committee recommends (10.25) would represent a clear subsidy. The policy underlying the Government's 1984 reforms of corporation tax is to restrict, and where possible remove, special tax reliefs to achieve greater neutrality, a wider tax base and lower tax rates for the benefit of business generally. Since the 1991 Budget, the main rate of corporation tax, at 33 per cent, is the lowest in any G7 or EC country. The intention is that investment decisions should be based on companies' commercial judgement and not distorted by tax subsidies. To single out R&D for special treatment would run counter to that policy.

21 In addition, there is little, if any, evidence from the studies of fiscal incentives outside the UK (reviewed, for example, in the 1987 joint Inland

Revenue/Treasury report) to support the proposition that extra tax reliefs meet the objective of stimulating significant increases in R&D activity. Moreover, international experience suggests that attempts at targeting relief on incremental expenditure on R&D can lead to tax driven distortions in companies' R&D programmes, in an effort to maximise the relief available. The Government considers that increasing the tax reliefs available may reduce the quality of investment and is unlikely to be a cost-effective way of promoting innovation.

22 The Committee raise the issue of local tax inspectors and their interpretation of the law applying to Scientific Research Allowances (SRA) (10.26). SRA is restricted by statute to expenditure on "activities directed at the extension of knowledge in the fields of natural or applied science". SRA is not available for capital expenditure or development activities falling outside that definition (although such expenditure may well qualify for capital allowances at the normal rates under, for example, the machinery and plant code). Last year, it became apparent that differences of terminology had led to confusion between pharmaceutical companies and their local Tax Inspectors on the application of SRA. The Revenue therefore met representatives of the pharmaceutical industry last Autumn to clarify the situation, and to agree the scope of SRA in this area. As a result, the problems of definition identified in evidence to the Committee seem to have been resolved.

23 The Committee recommends that Companies should be allowed to choose the rate of depreciation against tax for plant and machinery for themselves, and that it should be the same rate as that shown in their published accounts (10.27). The Government does not believe that a move to commercial rates of depreciation would encourage more innovative investment by industry. Under existing rules, the machinery and plant rate of capital allowances (25 per cent per annum on a reducing balance basis) writes off about 90 per cent of qualifying expenditure over eight years. By contrast, the available evidence suggests an estimated average economic life for these assets of 17 years. In addition, the special capital allowances regime for short-life assets allows assets with lives of less than five years to be written-off more quickly.

24 The system overall is therefore already generous in comparison with true economic depreciation. Only assets which have depreciated over a very short timescale would benefit from the change recommended. Many businesses could therefore find themselves worse off than under the existing regime.

25 The Committee further recommends that more than 100 per cent of company expenditure on approved training should be exempt from taxation (10.30). Most expenditure on training already qualifies for immediate full relief. Any additional allowances would therefore be a tax subsidy. The arguments relating to tax subsidies for R&D expenditure apply to training similarly. The cost of the measure proposed would be substantial with a high deadweight element in respect of existing and planned expenditure on business training programmes – about £20 billion a year is already spent on this by industry. Each extra 10 per cent of relief might cost in the order of £0.5 billion *before* any increase in expenditure. The Government already spends £2.7 billion in this area and considers that increasing the tax reliefs available is unlikely to be a cost-effective way of promoting training.

MANPOWER AND SKILLS

26 The Government recognises the importance of encouraging individuals to undertake training on their own initiative and accepts that tax relief, for individuals' expenditure on their vocational training, will provide a powerful stimulus for those who wish to train but are deterred by the cost (10.31). Indeed, the Chancellor included such a proposal in his Budget this year. The new tax relief, which it is proposed should start from April 1992, will extend to

the first four out of five levels of training leading to National Vocational Qualifications (and Scottish Vocational Qualifications). As tax relief will be deducted at source, it will be available even if the individual has no taxable income. This will be of particular benefit to those training with a view to returning to work, such as women re-entering the labour market.

27 The Government agrees that the training of new and existing teachers is vital to the ultimate success of the National Curriculum (10.29). To this end, the criteria for the approval of initial teacher training courses have been revised in light of the need to deliver the National Curriculum and its associated cross-curricular themes. The Government has made substantial support available for the implementation of the National Curriculum, and its associated requirements for assessment, through the Grants for Education Support and Training (GEST) programme. In the financial year 1991–92, the programme will support expenditure of some £170 million, including about £76 million for in-service training. In addition, there is substantial indirect Government support for curriculum guidance and training material produced by the National Curriculum Council and the Schools Examinations and Assessment Council.

28 The Committee attaches importance to the relationship between education and industry in developing a workforce (at all levels, including management) that has the skills and attributes needed to achieve economic success (10.34). In addition to the schools/industry programmes already referred to, there are a number of other DTI activities that are already helping to address some of the concerns voiced by the Committee. For example, the Teaching Company Scheme provides funding for young science and technology graduates, mainly but not exclusively in engineering, to work in industry for two year periods. The Neighbourhood Engineers Scheme helps the Engineering Council to run a network of engineers visiting schools to promote the idea of engineering as a career option. The Women into IT programme encourages women to take up careers in IT.

29 The Committee welcomes the introduction of postgraduate courses in innovation management and recommends that the Government should ensure that they are adequately funded (10.32). The Government has increased general resources available to HEIs which should allow them to plan for the provision and content of courses (10.33). However, it is for the institutions themselves to determine their priorities within the aggregate resources at their disposal from both public and private funds. Total public funding on higher education in 1991–92 is planned to increase by 10 per cent, compared with 1990–91. There was a similar increase in 1990–91.

"SHORT-TERMISM" AND TAKEOVERS

30 The Committee welcomes the work of the Innovation Advisory Board (IAB) (10.41). DTI believes that the IAB is making a very positive contribution on issues concerning innovation and the industry/City interface. The Board now intends to look at innovation and other interfaces, for example, the company/science base interface.

31 "Short-termism" is a complex issue, and the extent to which it is a real rather than a perceived problem is continuously debated (10.35). It is important, though not easy, to separate the causes, symptoms and effects. Tackling inflation must be a top priority in curbing any "short-termist" attitudes (10.36–10.38). The efforts of the Innovation Advisory Board (IAB) in improving communications between industry and the City, and of the CBI through its Steering Group on Long-Termism and Corporate Governance, should also contribute significantly.

32 The Government believes that whether or not individual takeovers increase efficiency (10.40, 10.42 and 10.43) the possibility of takeovers provides a spur to management. In addressing deal-making in his innovation speech on 21 May, the Secretary of State for Trade and Industry said we should not place the primary blame on the openness of our capital market. Rather, it is our industrial and educational culture which needs to be changed. "To ignore that and instead legislate against takeovers would be a mistake. It would not promote organic growth. It would just deprive effective managers of the ability to acquire less well managed companies or companies with potential synergy. Inadequate managers would no longer be kept on their toes by the possibility of takeover."

33 The Committee's recommendation concerning non-executive directors (10.44) is supported by recent Government statements on this subject. The appointment of effective non-executive directors is not a panacea, nor can the independence, which the Committee rightly emphasises, be provided by legislation. Companies and their shareholders could, however, often in their own interest, do more to ensure that a board is not entirely dominated by executives, who may sometimes be too much embedded in the corporate culture to question management proposals critically. The Secretary of State for Trade and Industry has recently endorsed the importance of having technologists, scientists and engineers in senior management in industry – and, by implication, among analysts (10.39).

GOVERNMENT FUNDING OF INNOVATION

34 The Government does spend money in areas where it will have real value to UK industry as a whole (10.45). However, support is given in areas where there are net national benefits and when industry cannot always be expected to provide the necessary funding itself. Support has been concentrated on pre-competitive research where wider external benefits can be shown to occur. This support is complemented by special schemes for smaller companies such as SMART and the recently introduced SPUR initiative to encourage new product and process development. However, the most valuable R&D for industry is that funded and organised by companies themselves. The latest statistics indicate this has grown by over 50 per cent in real terms in the six years to 1989.

35 The Committee considers that the DTI industrial innovation budget should be restored to the levels of the mid-1980s and active industrialists should advise on its disbursement (10.46). As compared with the 1980s, the pattern of DTI support is now entirely different, concentrating as it does on pre-competitive collaborative R&D. In the 1980s much support was given to near- market development projects in single large companies. However, firms, especially the larger ones, should fund these projects themselves, as they are in the best position to evaluate the risks and rewards involved.

36 In 1988–89 some expenditure – of the order of £50 million – was reclassified from the innovation budget to other budgets. Accordingly, any comparison of the present innovation budget with that in the mid 1980s should take this into account. In addition, an increasing proportion of support to UK companies for industrial R&D is now coming through the EC R&D programmes. Industry now receives as much Government funding for collaborative programmes through this route as directly from DTI ie total funding is twice that from DTI alone (10.47).

37 DTI does use industrialists to advise on the disbursement of its support (10.46), on the Innovation Advisory Board and also on a number of sectoral

advisory committees which advise on support for individual programmes and projects.

38 The Committee recommends that the Government should reconsider the use of preferential interest rates for encouraging innovation in industry (10.48). There are two main difficulties with such a proposal. First, maintenance of low rates for preferential borrowers requires a subsidy either from lenders, or, more likely, from the taxpayer. Secondly, it needs to be remembered that interest rates are the only effective way of reducing inflation. With the increasing sophistication of modern financial markets, lenders and borrowers could find ways to circumvent the distinction between preferential and ordinary borrowers so that the Government's monetary policy, and hence its grip on inflation, would be undermined.

39 The extension of Launch Aid to support other high risk large scale product developments in sectors other than aerospace is proposed by the Committee (10.53). The circumstances of the aerospace sector are unique due to the huge costs, very long timescales and very small number of manufacturers worldwide. There is no evidence that major development projects with commercial prospects are failing to go ahead for want of Government funding.

ACOST

40 The Advisory Council on Science and Technology (ACOST) advises the Prime Minister on a wide range of science and technology issues, including generic technologies. Their advice is made public whenever possible (10.49). The ACOST report on skilled manpower "Science and Technology: Education and Employment" was published on 29 April 1991 (10.28).

DTI ACTION

41 **Stimulating innovation:** In his innovation speech at Warwick the Secretary of State for Trade and Industry identified a number of areas where the Government is seeking to enhance or develop a series of mechanisms for stimulating innovation. These include improving the arrangements for business exploitation of the science base by: strengthening "Industrial Units" in Higher Education Institutions; enabling HEIs to fund audits of their technological capabilities; and expanding the Fellowship of Engineering's Visiting Professorship Scheme.

42 Other means of improving the awareness of the importance of innovation will include support for the Fellowship of Engineering MacRobert Award and the inauguration of a prestigious Innovation Lecture jointly with the Royal Society and the Fellowship of Engineering.

43 DTI will be carrying a number of other ideas forward to help bring about a much stronger "pro-innovation" culture. This will entail working with many organisations in the business and education sectors, the professions and the media. It will include the involvement of those with direct experience of the management of innovation and could include secondees from business to DTI (10.50). These secondees would be additional to those already working in the DTI technology divisions.

44 **Enterprise Initiative:** The Secretary of State for Trade and Industry announced early this year that the Consultancy assistance under the Enterprise Initiative would be extended for a further three years until March 1994 (10.58). By this time the consultancy market among small and medium sized firms is expected to be self sustaining. Consultancy assistance aims to encourage businesses to use outside expertise to address a wide range of management issues. The scheme has made a major contribution towards

overcoming the reluctance of small and medium-sized firms to use outside expertise to improve their capabilities. An independent evaluation of the scheme shows that its main objectives are being met; over half of assisted firms said they were more likely to use consultants in future at full market prices and a quarter have already done so. To date, DTI has received over 80,000 applications for consultancy support. Over 29,000 projects have now been completed. During the final three years the emphasis on technology is being increased. In addition, many more companies are expected to take advantage of the increased scope for "technology audits" and other technology consultancy help.

45 **Vertical Collaboration:** The Government agrees that such collaboration can be valuable. Vertical collaborations are eligible for support under R&D schemes on a similar basis to horizontal collaborations (10.59).

46 **LINK:** The Committee welcomes the recent changes in the LINK scheme (10.52). Under the new rules, projects may now consist of just one company, regardless of size, and a science based institution. LINK is the principal, Government-wide scheme to encourage collaboration between industry and the science base. It offers 50 per cent public funding for suitable collaborative research projects. After a slow start, the take-up rate for LINK has increased strongly. There are now 28 programmes, within which over 125 projects are underway involving over 300 participants. Another 100 projects have been approved. In total, the 28 programmes are worth £340 million, of which the Government has committed £170 million.

47 **SMART:** The Committee recommends that SMART should be expanded (10.58). This has indeed happened – the number of SMART awards has been increased from an original plan of 100 a year to 180 in 1991, and the maximum values of such awards have been increased from £37,500 to £45,000 for stage 1 and from £50,000 to £60,000 for stage 2.

48 **European Community R&D:** The Committee recommends that DTI should work to reduce the complications involved in EC programmes, and should assist in making these programmes known to and understood by British companies (10.61). DTI recognises these as important objectives and continues to seek to reduce the levels of bureaucracy involved for organisations wishing to participate in EC programmes. Both DTI and the Commission provide extensive publicity and information on EC research programmes and assist applicants where appropriate. The Commission holds publicity events such as BRITE/EURAM proposers' days at regular intervals. DTI, the Scottish and Welsh Office Industry Departments also hold seminars covering specific programmes, for example, the DTI ESPRIT smaller firms seminar. A recent independent review of the Commission's DG XII/XIII may contribute to streamlining the process further. The Government is also taking steps to raise awareness of EUREKA opportunities and to streamline procedures for processing project applications.

49 **Overseas Technology:** The Government notes the Committee's interest in the Overseas Technical Information Service (OTIS) (10.60). OTIS distributes scientific and technical information provided by science and technology posts in British Embassies overseas. This information is collected for central Government and is largely policy-related. It is also available on subscription to UK firms. Industrial subscribers tend to be strategic-thinking firms, often in high-tech areas. Various measures to raise the profile of the service are now being examined. In addition, the Secretary of State for Trade and Industry has recently announced up to a six-fold increase in the number of engineers to be seconded to work in Japan under the expanded Engineers to Japan Scheme.

The DTI is also giving further support to its Overseas Science and Technology Expert Missions Scheme (OSTEMS) with an increasing number of overseas missions.

50 **Dissemination of best practice:** The Government agrees that the dissemination of best practice is very important. As well as the inward technology transfer activities (mentioned above) which draw on overseas technology, DTI has a range of national technology transfer schemes which disseminate best practice from both the UK and overseas (10.57). Those of relevance to the theme of this report include; "Materials Matter", which addresses the use of modern materials in new products; "Open Systems", which shows the benefits of modern information technology standards in, amongst other things, design and manufacture; and "Managing into the 90s", which covers modern management techniques and technologies in design, manufacture, supply and quality. These programmes include live demonstration projects in companies and visit programmes to successful companies. DTI expenditure on technology transfer is increasing significantly.

51 **Environmental technology:** Innovation in environmental technology is of particular and cross-sectoral importance, highly relevant both to industrial competitiveness and the quality of life. DTI is therefore promoting innovation and technology transfer in environmental technology through the EUREKA Euroenviron Scheme announced in January 1990; the Environmental Technology Innovation Scheme (ETIS), operated jointly with the Department of the Environment; and the DTI Environmental Management Options Scheme (DEMOS), both announced in October 1990. The response to these has been encouraging.

NEW INITIATIVES FOR SMALLER FIRMS

52 Smaller firms have an important role to play in innovation which depends materially on their R&D activities. Support is already available through DTI schemes eg the collaborative programmes, SMART and Regional Enterprise Grants. However, it is recognised by the Government that smaller firms may have particular difficulties raising funds to finance R&D. In February 1991, the Secretary of State for Trade and Industry launched three new initiatives specifically to help independent, smaller firms with up to 500 employees. These measures, welcomed by the Committee (10.51), are worth collectively £48 million and represent a 25 per cent increase over DTI's annual spend on R&D and technology transfer for smaller firms. The initiatives – Support for Products under Research (SPUR), Manufacturing Planning and Implementation Studies Programme (MPI) and Technical Action Line (TAL) – are designed to encourage smaller firms to innovate and also to foster links between the science base and industry.

53 **SPUR** offers a fixed 30 per cent grant (up to a maximum grant of £150,000) to single company new product and process development projects that demonstrate a significant technological advance. Over £32 million is available for applications received from industry over the next three years.

54 **MPI** provides grants of up to £50,000 for half the cost of expert advice to help smaller firms plan for the introduction of modern manufacturing systems. Companies completing successful projects will act as demonstration firms, hosting visits for other businessmen to assist the spread of best practice.

55 **TAL** (formerly known as SMETAS), helps smaller firms find solutions to technical problems. TAL, run by the Regional Technology Centres (RTCs), aims to provide a quick problem solving service, drawing on local expertise from colleges, polytechnics, universities and research organisations. This

scheme worth £5 million, together with an additional programme of RTC development funding, will substantially strengthen the RTCs and the services that they offer to smaller firms (10.54).

56 The Government considers that strengthening the RTCs in these ways will help them to make an effective contribution to the needs of local industry and secure closer cooperation with the many other existing regional and local sources of assistance to business. The creation of new development agencies on a regional basis would fragment the present disparate support structure (10.54).

MARKETING AND SIMPLIFICATION OF SCHEMES

57 The Committee recommends that DTI schemes must be made more readily accessible and easily understood (10.56). DTI is striving to achieve this by providing a comprehensive package of services for business under the Enterprise Initiative, including help with innovation, research and technology. The package has been extensively and successfully promoted to business, both nationally and regionally. An introductory booklet to the Enterprise Initiative sets out clearly and simply the range of services and schemes available. It is supported by a comprehensive range of more detailed publications and a general enquiry number (Tel. 0800 500 200). Firms can also contact any of DTI's regional offices, the Scottish Office Industry Department or the Welsh Office Industry Department which act as"gateways" to the Department's services and schemes. All BT telephone directories and Yellow Pages carry the Enterprise Initiative number and the number of the local DTI office.

58 A newly published brochure, "Technology and Change – Help for Business," draws together, for the first time, all the innovation services offered by DTI. An "Innovation Enquiry Line" (Tel. 0800 44 2001) was introduced in May 1991 to help firms obtain information about DTI innovation schemes. These two initiatives should improve access to DTI innovation support significantly.

59 In addition, the rules and procedures for the DTI collaborative R&D schemes were simplified in May 1991. All schemes now only require a minimum of two collaborators and the approvals procedures have been streamlined. The Committee recommends that DTI schemes should only be altered to meet changing needs (10.55). The general portfolio of DTI's schemes has remained the same since January 1988. New schemes are only introduced to meet particular needs eg the recent new initiatives to help smaller firms.

CONCLUSION

60 The Government is grateful to the members of the Select Committee for their considered and wide ranging recommendations. Their Report has undoubtedly succeeded in focusing attention on the importance of innovation in manufacturing industry. When giving evidence to the Committee, the Secretary of State for Trade and Industry reaffirmed the Government's commitment to the importance of manufacturing industry. He said " I certainly cannot imagine a healthy British economy without a vigorous and successful manufacturing sector........... It is important both as a source of wealth creation and for exports and jobs".

Printed in the United Kingdom for HMSO
Dd 0506886 c15 6/91 3383/4B 65536 Ord 155511 24/20954

HMSO

HMSO publications are available from:

HMSO Publications Centre
(Mail and telephone orders only)
PO Box 276, London SW8 5DT
Telephone orders 071-873 9090
General enquiries 071-873 0011
(queueing system in operation for both numbers)

HMSO Bookshops
49 High Holborn, London WC1V 6HB 071-873 0011 (counter service only)
258 Broad Street, Birmingham B1 2HE 021-643 3740
Southey House, 33 Wine Street, Bristol BS1 2BQ (0272) 264306
9-21 Princess Street, Manchester M60 8AS 061-834 7201
80 Chichester Street, Belfast BT1 4JY (0232) 238451
71 Lothian Road, Edinburgh EH3 9AZ 031-228 4181

HMSO's Accredited Agents
(see Yellow Pages)

and through good booksellers

ISBN 0 10 115752 5

ISBN 0-10-115752-5

9 780101 157520